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Report of the sixth session of the

INDIAN OCEAN FISHERY COMMISSION

Perth, Australia, 25-29 February 1980

FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS

REPORT OF THE SIXTH SESSION OF THE INDIAN OCEAN FISHERY COMMISSION

Perth, Australia, 25-29 February 1980

FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS

Rome 1980

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PREPARATION OF THIS REPORT

This is the final version of the report as approved by the sixth session of the Indian Ocean Fishery Commission.

Distribution

Participants in the session
Members of the Commission
Other interested nations and international organizations
FAO Fisheries Department
Fishery Officers in FAO Regional Offices

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OPENING OF THE SESSION

1. The Indian Ocean Fishery Commission (IOFC) held its sixth session from 25 to 29 February 1980 in the William Ballroom at the Park Towers Hotel, Perth, Australia. In the absence of both the Chairman and the First Vice-Chairman, Mr. E.A. Purnell-Webb of Australia chaired the session. The session was attended by the representatives of 19 members of the Commission, by an observer from one Member Nation of FAO, by the representative of the United Nations Development Programme and by an observer of the South Pacific Forum Fisheries Agency. A list of delegates and observers is given in Appendix A to this report.

2. At the opening ceremony, the Hon. R.J. O'Connor, Minister for Fisheries and Wildlife for Western Australia, welcomed the delegates. The Hon. E. Adermann, Minister Assisting the Minister for Primary Industry of the Australian Government opened the session and Mr. Kenneth C. Lucas, Assistant Director-General (Fisheries) of FAO responded in an address to the session. The texts of their speeches are to be found in Appendixes B and C.

ADOPTION OF THE AGENDA AND ARRANGEMENTS FOR THE SESSION

3. The Commission adopted the Agenda reproduced in Appendix D. A list of the documents considered by the Commission is given in Appendix E.

RESOURCE MANAGEMENT ISSUES

Information on the stocks

4. Although the Indian Ocean is less rich in fish resources than other oceans, present catches, of around 3.7 million t, could probably be increased by 2-3 times if all stocks were exploited to their maximum sustainable level. Among conventional types of fish, the main opportunities for increased catches lie with the small pelagic species. The largest unexploited resources are the mesopelagic fish, though these do not yet support a commercial fishery anywhere in the world. Because of the relatively low level of resources compared to other ocean areas of the world and the sailing distances involved, not many long-range vessels, other than tuna longliners, have been attracted into the Indian Ocean. The 75 percent increase in catches since 1965-69 (considerably greater than the world average) has been due to increased production of the coastal States. Though the Indian Ocean as a whole is only moderately exploited, several stocks - shrimp in many areas, the larger sizes of temperate tuna, and some valuable demersal fish - are already heavily fished.

5. The Commission expressed its appreciation to FAO for the quality of documentation which provided a broad perspective of the status of the fisheries and management problems on a region-wide basis. Some delegates pointed out that statistics and other information assembled by FAO over such a broad area was extremely useful, but that the Indian Ocean was a vast area with diverse parts and there was a need for individual governments and FAO to generate information of a more precise nature dealing with smaller subdivisions of the region.

6. One delegation pointed out that as far as fish production was concerned, the Indian Ocean was very low on the global scale. With a quarter of the world population living in its vicinity, the Indian Ocean provided only 5 percent of the world's marine fish catch. Considering the urgent requirements of the people for protein and the apparent rather low extent of utilisation of many of the stocks, the delegate is of the view that the objective of management in the region should be toward exploitation and development rather than toward conservation in the sense of applying strict regulatory limitations on the fisheries. Supported by representatives from several member countries, the delegate expressed the view that, to enhance development opportunities, there were urgent needs to improve the standard of information being gathered on existing fisheries and to develop methods of stock assessment which would give quick, approximate answers with a minimum of effort.

7. Several delegations stressed the need for FAO to continue and intensify its training in the various technical activities involved in resources management and development. Mention was made of training courses and seminars, and also of the provision of manuals and guidelines for the procedures to be followed. The fields in which such training was required were, inter alia, statistics (including the design of frame surveys, and the computer processing of statistical data), the design and execution of resource surveys, and stock assessment. The manuals or guidelines might also cover matters such as the general nature of the activities and measures needed for the proper management of shared stocks.

8. The Commission noted that past resource surveys conducted under the auspices of the International Indian Ocean Fishery Survey and Development Programme (IOP) had been extremely useful in providing a "rough fix" on the abundance of resources over broad ocean areas, and noted with satisfaction that survey work was now being extended, for the first time, through the cooperative JETINDOFISH project, to waters northwest of Australia and south of Indonesia. Noting that IOP, which has been coordinating the JETINDOFISH project, was terminated at the end of 1979, the delegates expressed the hope that the project would be able to continue to operate as it had originally been organized and conceived.

9. Because the broad surveys that had been conducted in the past could never hope to provide precise information on the stocks in limited areas and on a seasonal basis, the consensus view was that there was an important and urgent need for more intensive surveys on a sub-regional basis aimed at identifying and quantifying underutilized resources and developing methods for harvesting them. Of particular interest to many delegates was more precise information on the availability of resources between the inshore areas now exploited by artisanal fishermen and the outer limits of newly proclaimed 200-mile zones, though it was recognized that in many cases this zone was less rich in resources than the inshore zone already being exploited. However, in some cases there are possibilities in the EEZs for the development of fisheries on oceanic tuna, squid, deep sea shrimp and lobster.

10. The Commission noted that with increasing needs for better assessments of the stocks and for better information on the availability of resources throughout the Indian Ocean, it was more important than ever for national governments to improve the completeness and accuracy of catch and effort statistics for their fisheries. Governments were therefore urged to increase their efforts to bring about such improvements. In this regard, the Commission requested FAO to give serious attention to requests from various member countries for technical assistance in improving national statistics (see paragraph 7).

11. Whereas exploration of underutilized resources was of most urgent priority, some delegations pointed out that the inshore fisheries, conducted mainly by artisanal fishermen, were still the most important fisheries in the region and that efforts to ensure their rational utilization must remain a prime objective of cooperation in the Indian Ocean area.

12. Several delegations pointed out that there was a serious shortage of basic biological information relevant to resource management of tropical species. This required fundamental research, which tended to have a low priority in national fisheries programmes and there was, therefore, a need to make maximum use of the talents of the relatively few research workers in the field. It was recognized that this work provided great opportunities for international collaboration at the sub-regional, regional, or even global level, in that results of fundamental research (e.g., on the ecology of a given species of fish), once carried out in one country, could be immediately applied in many other countries. Examples of problem areas were assessment and management of species of coral reef fish and interactions in multispecies fisheries. The latter subject was felt to be of particular importance in order to anticipate the consequences of major expansions of multispecies fisheries in the Indian Ocean area.

13. The convening of workshops on various technical subjects was viewed as an important way of ensuring that relevant information (which had general worldwide application) was disseminated effectively. The Commission was appreciative of an offer by the delegate of the United States to provide member countries with copies of reports from a workshop recently

held in the United States on stock assessment of tropical small-scale fisheries. It also noted with appreciation that a workshop of specialized experts in multispecies fisheries was being organized by the International Centre for Living Aquatic Resources Management (ICLARM), and hoped that the results of that workshop would be widely disseminated among IOFC member countries.

14. On the general question of exchange of statistics, and of research data, many delegates expressed strong support for workshop meetings on stock assessment similar to those convened by FAO in Seychelles and in a number of countries associated with the South China Sea Fisheries Development and Coordinating Programme over the past two years, and hoped that arrangements would be made for them to continue on a more regular basis. It was also felt that the discussions held at the December 1979 meeting of IPFC's Standing Committee on Resources Research and Development (SCORRAD) had provided useful information on problems faced by many nations throughout the Indian Ocean. A number of delegations reemphasized the need to train technical specialists in developing countries so that they could carry out stock assessment work at home and contribute more effectively to international consideration of assessment problems.

Tuna management

15. The Commission reviewed and adopted the report of the Sixth Joint Meeting of the IOFC and IPFC Tuna Management Committees (which had been held in Perth, Australia, immediately preceding the Commission session). The Commission strongly endorsed the recommendations contained in the report (Document IOFC/80/6) which included:

(a) that FAO should seek funding in order to recruit an additional expert for the FAO/UNDP Project for Tuna Management in the Indian and Pacific Oceans in order to review alternative international research programmes required for the IOFC/IPFC area, and to develop concrete proposals for research, including identification of sources of funding;

(b) that once a detailed proposal had been elaborated and considered by the IPFC/IOFC Tuna Management Committees, FAO should seek appropriate funding for the field work;

(c) that as a priority item in its programme, the Project for Tuna Management in the Indian and Pacific Oceans should prepare a field manual for collection of statistics;

(d) that the responsibilities and terms of reference of the IOFC Committee on Management of Indian Ocean Tuna be made more specific and brought into line with those of the IPFC Special Committee on Management of Indo-Pacific Tuna (see Document IOFC/80/6 for detail);

(e) that membership in the IOFC Tuna Management Committee should be made open-ended so that any member country of the Commission could become a member of the Committee if it wished.

16. The Commission commended FAO and UNDP for having taken the first step toward development of a tuna programme through employment of a consultant for a one-year term and noted with appreciation that UNDP had agreed to finance the new Project for Tuna Management in the Indian and Pacific Oceans initially for the period 1980-81. The Commission noted that it would be necessary to continue the project during the next UNDP cycle, 1982-86, and delegates indicated they would urge their governments to support the Project strongly in forthcoming meetings of FAO Regional Conferences for Asia and the Pacific and for Africa, and of the Governing Council of UNDP.

17. Several delegations expressed strong support for the proposed international tuna research programme and indicated that they expect full support of their governments through provision of, for example, statistics.

18. The delegate from Seychelles emphasized the importance of the tuna resource to his country and stressed the view of his Government that there was an urgent need to take management action regarding the tuna fisheries in the Indian Ocean. He pointed out that catch rates in some Indian Ocean tuna longline fisheries had declined drastically since the fishery began and now were at uneconomically low levels. This created grave difficulties for coastal States desiring to enter the fisheries. It was the view of the delegate that if action had been taken to limit effort, at an early stage in the development of the fishery, both economic and biological yields would have been higher. He noted that three countries in the Southwest Indian Ocean were initiating surface fisheries for tuna. He believed that, with respect to both the new surface fishery and the existing longline fishery, IOFC had clear responsibility and authority to propose management measures to ensure that the stocks were fished at appropriate levels taking into account both biological and economic factors. There was a need for management at all stages of the development of fisheries, not just when severe resource crises occurred. In this regard, action to reduce longline fisheries to more economic levels and to prevent the new surface fisheries from becoming uneconomic would seem appropriate. He further stated that development of recommendations for management action within the Commission should be by consensus, but that once recommendations were made by the Commission, they should be adopted by member countries unless a specific objection was lodged. The Government of Seychelles looked forward to formation of a sub-regional body within IOFC for the Southwest Indian Ocean to facilitate exchanges of experience and cooperation in local tuna management and development programmes.

19. The delegate of Mauritius expressed his support for the position expressed by the delegate of Seychelles and pointed out that, since the problem of excess effort in the tuna longline fisheries had been recognized by the Commission for some time, appropriate recommendations for action were now long overdue. He also noted that part of the problem stemmed from the fact that some active participants in the Indian Ocean longline fisheries were not members of either IOFC or of FAO. He believed that solutions to this problem would have to be found if any effective international management system were to be developed for Indian Ocean tuna.

20. The delegate of Australia expressed the view that careful thought would have to be given to the question of the functions of sub-regional bodies and of broader regional organizations. He pointed out that whereas sub-regional bodies, particularly those involving only coastal States, serve a need by providing for harmonization of policies and national programmes of participating states, more broadly based bodies involving all countries with interests in tuna stocks must remain the focus for international cooperation in research and management of highly migratory stocks. With respect to the question of taking regulatory action for Indian Ocean tuna, he believed that a choice had to be made: either the present system, where organizations such as IOFC provided general advice on management (with implementation of such advice depending on the goodwill of governments), should continue or mechanisms would have to be developed wherein international bodies, such as IOFC, would make recommendations which, subject to usual international practice for objections to be lodged, would be binding on Member States.

21. Several delegations wished to emphasize the acute need of their countries for assistance in establishing systems for collection of tuna statistics at the national level. FAO assistance in providing training was viewed as being especially important.

22. One delegate, noting the complexity of discussion of tuna management problems at the present Commission meeting and at the Joint Meeting of IOFC/IPFC Tuna Management Committees which immediately preceded it, suggested that, at future meetings, past recommendations of the Commission be outlined by the Secretariat along with an account of what actions had been undertaken to implement such recommendations.

Surveillance

23. Several delegations mentioned that surveillance and enforcement in 200-mile economic zones was a management problem of great importance to coastal States. There was an acute need for advice with respect to developing cost-effective systems. One delegate recalled a

proposal made by some delegations at the Thirteenth Session of FAO's Committee on Fisheries which requested FAO to establish a "register of complaints and reports of infringements", and asked what action FAO proposed to take with respect to the proposal. The United States delegate indicated that his Government had fielded two missions to advise governments of developing coastal States regarding surveillance and enforcement procedures. The meeting was advised that FAO was studying the question of assistance to member countries with respect to the planning of surveillance and enforcement programmes. As part of this study, the Assistant Director-General (Fisheries) stated that FAO would consider holding a workshop of specialists with the intention of developing a series of options and guidelines for the planning of well balanced surveillance and enforcement programmes on a cost-effective basis. It was hoped that the outcome of this workshop, which would be freely available in report form, would be of direct interest to coastal States and would be useful as a general guide for technical specialists giving more specific advice on the subject in the course of assistance missions.

Management of other major stocks

24. In introducing this item (see document IOFC/80/5), the Secretariat noted that management measures are most vital when needed to preserve the biological productivity of the stocks, but are also needed to avoid excessive costs and to ensure the optimum social and economic benefits from the resources. Because it is always difficult to cut back fisheries which are clearly overexploiting the stocks (from either the biological or economic point of view) the practical problems of introducing management measures are much fewer if such measures are applied early in the development of fisheries to prevent expansion of the fisheries to undesirable levels. Considering that a substantial part of the Indian Ocean resource is still only lightly exploited, the present moment is favourable for giving consideration to planning management programmes before exploitation proceeds too far.

25. Whereas some stocks are in a relatively unexploited state, many stocks, particularly those found in inshore waters near areas of dense human populations, are very heavily exploited and undoubtedly could benefit from improved management now. On a national basis, heavy exploitation in the shrimp fisheries is a cause of concern. Whereas, with some notable exceptions,[1/] the total yield from the shrimp fisheries does not appear to be dropping, excess fishing effort in many areas, the capture of juvenile (lower priced) shrimp, and by-catches of fish (particularly those that are discarded) in shrimp fisheries are creating economic and social problems. A number of options for at least partially offsetting these problems could include size limits, mesh size restrictions, prohibitions of certain types of gear, area closures to limit catches of small shrimp and fish, and limitation of fishing effort.

26. Fisheries on a number of fish stocks found within national boundaries could also benefit from better management but because such fisheries, like many shrimp fisheries, often involve artisanal fishermen in populous areas (where alternative employment opportunities are scarce), the problems are very difficult to solve. Such problems have been discussed at several FAO-sponsored workshops held in Southeast Asia under the auspices of the UNDP/FAO South China Sea Fisheries Development and Coordinating Programme. The problems of managing inshore fisheries in the Indo-Pacific area were also considered at the 1979 meeting of IPFC's Standing Committee on Resource Research and Development.

27. In the Indian Ocean area a number of stocks span national boundaries of fisheries jurisdiction and are fished by two or more countries. The most important of these are the tunas (see paragraphs 15-22), but there are a number of other stocks, particularly shrimp and both pelagic and demersal fish in the Gulf area (see next paragraph) and small pelagic species in various parts of the central and eastern Indian Ocean and adjacent seas. Development of mechanisms for joint research, review of the state of the stocks and consideration of management actions are required.

1/ The shrimp in the Gulf area - see paragraph 27

28. The Commission heard a report from the delegate of Bahrain on the Second Session of the IOFC Committee for the Development and Management of the Fisheries Resources of the Gulfs held in Doha, Qatar, in September 1979 (see Document IOFC/80/11). In reviewing the work of the Committee, the delegate described the severe decline that had occurred in the shrimp stocks in the area and the stringent measures, including a six-month closure to all shrimp fishing, a ceiling in the number of active shrimp fishing vessels, steps to provide for in-depth assessment of the state of the stocks and measures to ensure that member countries in the Gulf area developed the legislative and enforcement tools to implement required regulations, that had been recommended by the Committee to meet the situation.

29. In his presentation, he indicated that in addition to very heavy fishing on the stocks, habitat deterioration as the result of development of foreshore areas and oil pollution may have played a role in the depletion of the stocks. He stated that a number of the countries in the sub-region had, by notification to the Director-General of FAO, indicated their acceptance of the Committee's management recommendations and that acceptance by the other coastal countries in the sub-region was expected in the near future.

30. He outlined a number of other priority recommendations in the report dealing with a feasibility study for the expansion of demersal fisheries, development of a technical support unit for the Committee, efforts to harmonize national legislation, strengthening of national systems for collection of statistics, regional assessments of the shrimp fisheries, etc. With FAO support, action to implement most of these recommendations was underway. Progress was also being made on a number of other recommendations regarding matters which either because they required greater study or were of a more long-term nature were deemed to have a somewhat lower immediate priority. These included the development of closer regional cooperation in fisheries research and development and pollution control, the preparation of national development plans, development of measures to minimize adverse effects of pollution and habitat alterations on marine organisms (including national programmes of environmental research), fundamental research on the biology of commercially important marine organisms, experimental programmes on marine fish farming, investigation of the potential of mesopelagic fish resources, exploration of means to improve market opportunities for marine products and experiments aimed at improving the utilization of by-catches.

31. Considerable discussion took place on the recommendations emanating from the Gulfs' Committee. One delegate pointed out that the decline in shrimp stocks had been observed for several years and expressed the view that delayed action had resulted mainly because of a lack of a mechanism, until recently, for dealing with the problems. Even now the measures taken may not be sufficiently comprehensive. The relative effects of environmental deterioration and of overfishing on the stocks were discussed and concern was expressed that the proposed actions did not address the problem of mitigating the possible effects of man-made environmental changes. The Commission recommended that the Governments concerned should also address this problem. The Assistant Director-General (Fisheries) expressed the view that regardless of what the cause of the decline in shrimp production had been, the recommended limitations on fishing were the only logical response on the part of the fisheries management authorities as a first step in addressing the problem.

32. Several delegates described resource management problems occurring in their own countries. The difficulties of imposing restrictions on artisanal fisheries, involving many thousands of small-scale fishermen (who had little understanding of the need for management but who depended on their participation in the fishery for their sparse livelihood) were emphasized. Some delegates described attempts in their countries to create alternative forms of employment for artisanal fishermen, particularly through development of mariculture for fish, crustaceans and marine plants. An urgent need was felt by some delegations for assistance in assessment of stocks as a basis for managing the artisanal fisheries and for finding alternative fisheries to spread the efforts of small-scale fishermen. It was also felt there were important needs for gaining a firmer understanding of the ecological relationships of marine organisms in the heavily exploited fisheries.

33. The Commission considered the problems of management of stocks shared by two or more nations. While noting that the special problem of tuna had been discussed earlier (see paragraphs 15-22), a number of delegations requested FAO to give consideration to proposing mechanisms for cooperation between countries which shared stocks with respect to exchange of information, stock assessment and, as appropriate, joint action for management.

34. A particular problem was cited with respect to the imposition of size limits in fisheries for shrimp and rock lobster. Enforcement of such regulations was very difficult. Two delegations requested assistance on the part of nations importing their products to place a ban on purchases of undersized crustaceans.

35. One delegate suggested that for exploited artisanal fisheries it should be possible to develop at least a gross estimate of sustainable yield on the basis of existing, admittedly approximate, information on past catches. Once having done that, then the focus of management should shift to the question of how many fishermen, families or households can be supported by the fishery employing the most appropriate technology. He urged FAO to give more detailed consideration to the economic and social aspects of the small-scale fishery problems.

FISHERY DEVELOPMENT ISSUES

36. The Secretariat, in introducing this item, reiterated that major portions of the aquatic resources in the Indian Ocean were underexploited and that, from the biological point of view, increase in catches of 2-3 fold might be possible (not to mention considerable quantities of mesopelagic resources in the North Arabian Sea). Most of these resources lay offshore. On the other hand, inshore small-scale fisheries using traditional methods predominated throughout countries bordering the Indian Ocean. Document IOFC/80/7 and the terminal report of the Indian Ocean Programme outlined the main constraints to fisheries development in the area, which included lack of good information and statistical data on the resources and their utilization, scarcity of qualified and experienced technicians and administrators, poor infrastructures, internal communications and marketing facilities, and lack of quality control, repair and maintenance services and shortage of investment capital.

37. Extensions of fisheries jurisdictions to 200 miles had strengthened the interest and commitment of governments toward accelerating the development of fisheries. There was an urgent need for governments to review or formulate fisheries development policies and programmes in the context of the changed circumstances. At its Fifth Session, IOFC concluded that fisheries development should be viewed as part of a government's overall economic policy. Within this context, fisheries could contribute to national objectives by providing needed food supplies, earning or saving foreign currency, creating employment opportunities and improving socio-economic conditions in fishing communities. With respect to options for development, nations had a basic choice between building up local industries through local endeavour or by relying, at least initially, on foreign vessels or firms to help accelerate the transfer of technology or rate of development.

38. In a number of countries, fisheries administrations, traditionally concentrating on research, conservation and regulation, were poorly geared toward development. Attempts to overcome this deficiency by creating government-sponsored development corporations or other parastatal organizations have not always been encouraging. There was perhaps a need to distinguish clearly between commercial and socio-economic functions and to avoid having government organizations competing with private sector enterprises.

39. With respect to joint ventures and other forms of bilateral arrangements, complementarity of interest of all parties was essential for success. Bilateral arrangements have been useful for exploring new fishing grounds or for exploiting species for which there were no domestic markets. Too often, however, the desired transfers of technology and skills and hopes for stimulation of local enterprise have failed to materialize from these arrangements.

40. The Secretariat called attention to the FAO programme of assistance in the development and management of fisheries in extended zones of national jurisdiction launched in 1979 by the Director-General to assist developing coastal States in taking advantage of development opportunities and in meeting their management responsibilities in their exclusive economic zones. The overall objective of the programme is to develop the competence of developing coastal States to manage and develop their marine fishery resources. The programme has two specific aims: to meet the immediate identified needs of developing coastal States and to analyse how fisheries in exclusive economic zones can be developed and managed in the long term.

41. In the short and medium term, activities within the programme included undertaking inter-disciplinary missions, on request, to assist countries to develop policies and plans; advising on specific questions ranging from resource assessment to national legislation and enforcement, training administrators and others responsible for the management and development of fisheries in exclusive economic zones; mobilizing bilateral and multilateral funding; and promoting collaboration in fisheries development and management through regional bodies and programmes.

42. The long-term studies would centre primarily on issues arising in fisheries management at national, sub-regional and regional levels, e.g., shared stocks or surveillance and enforcement problems, and the preparation of development options based on socio-economic and technical studies of all aspects of fisheries.

43. As to financing, U.S.$ 35 million will be required over the next three years (1980-82) to plan and execute the programme, which will subsequently require up to U.S.$ 20 million a year for the next 15-20 years. Much of the immediately required support is being provided by the UNDP. Norway is also making a substantial financial contribution to the programme. Several other countries have made offers of technical cooperation, including training facilities, fellowships, research and other vessels, as well as equipment.

44. An essential characteristic of the programme is that it will be delivered through a network of multidisciplinary and locally based technical support units designed to respond to the specific needs of groups of countries in natural management areas. These areas will be based on such factors as shared stocks or fisheries, common problems or opportunities and other natural affinities among the countries concerned (see further discussion in paragraphs 65-68).

45. The Commission discussed the potential for development of commercial fisheries for the apparently abundant resources of mesopelagic fishes in the Western Indian Ocean, Arabian Sea and Gulf of Oman. Several delegates expressed the view that because of high costs of fishing and difficulties in developing suitable products, commercial development of the fishery might not take place for some time. One delegate suggested that it would be useful to hold a workshop on the subject in the near future. In view of the interest of some delegations, an FAO staff member made a presentation outlining the potential of the mesopelagic resources and actions that are planned, for the information of the Commission. His summary is found in Appendix F.

46. Some delegates were of the opinion that the exploitation of mesopelagic resources (and other resources such as krill) is a matter of high technology and does not correspond to the immediate needs of developing countries; the restricted financial means available should, in the first hand, be used for urgent exploitation and management of stocks in coastal and inshore waters where the greatest needs are encountered.

47. The Commission strongly endorsed FAO's programme of assistance in the development and management of fisheries in extended zones of national jurisdiction.

48. Delegates from developing coastal States were invited to comment not only by expressing general opinions but also by providing advice regarding specific and concrete requirements and priorities for developing and managing fisheries within the limits of extended fisheries jurisdiction, both at the national and sub-regional levels. Such advice would assist FAO greatly in planning its development programmes.

49. Delegates from most coastal States expressed views regarding their requirements for assistance. These are listed in Appendix G. In indicating their requirements, a number of delegates emphasized that requests made at the meeting were in addition to other requests that had already been made to FAO or other bodies through normal channels. It was noted that a number of requests for assistance had already been made in earlier discussions (paragraphs 4, 14, 21 and 32). The Commission recognized that requests being made might be incomplete and that the main purpose of carrying out the review at the present session was to give FAO indications of particular fields where assistance might be of greatest value and to alert FAO with respect to particularly urgent requirements of individual countries.

50. Several delegations expressed the strong view that assistance programmes should be implemented as much as possible through national institutions. Proceeding in this way would provide for better on-the-spot monitoring and evaluation of programmes and for greater opportunities for local officers to participate in the programmes. There was an increasing need for developing coastal States to develop their own policies rather than depending on advice from outside with respect to strictly domestic matters. More programmes were required at the practical and specific level rather than at the theoretical and general level.

51. The delegate of the Republic of Korea stated that his country was actively cooperating with developing countries in the fisheries field through joint ventures and other bilateral arrangements. In addition, the Republic of Korea has been accommodating a number of overseas trainees in its fisheries training centre (approximately 20 in the current year).

52. The delegate from Japan indicated that his country, one of the most experienced in the world with respect to marine fisheries, was very actively engaged in providing assistance to developing coastal States. Requests for assistance, which are forwarded through regular diplomatic channels, are met through funding by the Ministry of Foreign Affairs and by the Japan International Cooperation Agency (JICA). He stressed the importance of developing countries establishing firm domestic markets for products landed by their small-scale fisheries before launching large-scale commercial fisheries. He also emphasized the importance of ensuring that the type and quality standards of products fully took into account the customs and requirements of consuming countries.

53. The delegate of the United States expressed strong support for FAO's programme of assistance in the development and management of fisheries in extended zones of national jurisdiction. Although U.S.A. law prevented direct contribution to funding of the FAO programme beyond its regular programme contribution, the United States was developing a complementary programme of assistance which, if approved and funded, would be closely coordinated with FAO. Plans were being made for the United States programme for fiscal year 1982 (which begins 1 November 1981). In the meantime, limited funding was available for small ad hoc missions.

54. The delegate from Spain indicated he would inform his Government concerning the assistance requirements of different countries as expressed at the present meeting and stated that Spain would be interested in cooperating with developing countries concerning the development of prawn fishing in deep water and tuna fisheries, especially skipjack.

55. The delegate of Australia outlined Australian experience in developing its fisheries and its regime of extended fisheries jurisdiction. Australia was willing and anxious to share its experiences with other countries. As examples of documents or information which might be of interest, he cited reports outlining development options compiled in preparation for Australia's extension of jurisdiction, initial studies by Australia of the problems of coral reef fisheries and Australian experience with the negotiations of bilateral agreements and joint venture arrangements to develop fisheries for underutilized stocks.

56. The delegate of the United Kingdom stated that FAO should remain the focal point for international cooperation in the fisheries assistance field. Whereas it could not make direct financial commitments to FAO, the United Kingdom was carrying out complementary programmes on a bilateral basis. Specialized offices such as the Tropical Products Institute also make a contribution to the United Kingdom's assistance programme.

57. The delegate of France indicated his country's willingness to entertain requests for bilateral cooperation in the field of fisheries research. For this purpose, France has a specialized agency, ORSTOM,1/ which is prepared to accept trainees or to make experts available. France also is prepared to explore requests for cooperation in the economic sector (e.g., joint ventures) or in the practical fisheries sector (e.g., training).

FUTURE OF IOFC INCLUDING ITS SUBSIDIARY BODIES

Future orientation and requirements

58. The future of the Commission had been placed on the agenda as a major item upon a request made by the Commission itself at its last session following discussions on the new regime of the oceans and on the proposed gradual decentralization of FAO's technical assistance activities in fisheries. The Commission considered the item on the basis of Document IOFC/80/9.

59. The Commission noted with satisfaction that increased attention was being given by FAO governing bodies to the desirability of adjusting the present structure of regional fishery bodies and providing them with greater technical support so as to make them more responsive to the requirements of coastal States under the regime of extended national jurisdiction over fisheries. It was particularly pleased that the concept of natural management areas, based on such factors as shared stocks or fisheries, common problems or opportunities and other natural affinities among the coastal States concerned, had received strong support from the Programme Committee, the Committee on Fisheries, the Council and the Conference of FAO. In its view, it was essential that each such management area should be served by an appropriate subsidiary body of the relevant regional fishery commission and that each subsidiary body should be provided with a locally-based, multidisciplinary technical support unit financed mainly from extra-budgetary resources.

60. The Commission considered that this new policy would enhance the effectiveness and impact of its own activities and recalled that it had already recognized the usefulness of this approach when establishing, at its third session in 1972, the Committee for the Development and Management of the Fishery Resources of the Gulfs. The active role played by the Committee in promoting the rational management of fishery resources on a sub-regional basis had been fully demonstrated by the conservation measures it had recommended at its last session with respect to shrimp stocks (see paragraphs 27-29). In this connexion the Commission noted that it had been requested by the Committee to amend its statutes so that membership would be restricted to coastal countries in the Gulfs. Under the statutes adopted by the Commission in 1972, membership in the Committee was open to all member countries of the Commission coastal to or fishing in the Gulfs. The Commission agreed to this request and decided to amend the Committee's statutes accordingly.

61. In order to implement further the policy of ensuring fishery development and management on a more appropriate geographical basis than is the case at present, the Commission resolved to establish a Committee for the Development and Management of Fisheries in the Southwest Indian Ocean and a Committee for the Development and Management of Fisheries in the Bay of Bengal. As the suggestion was made that a similar committee might be established for the Arabian Sea, the Commission decided to invite the Director-General to consider consultations on this matter with the countries directly concerned and to advise the Commission in due course of the desires of the countries of this sub-region.

62. As regards the terms of reference of the two Committees it had established, the Commission agreed that the Committees should have, in the Southwest Indian Ocean and the Bay of Bengal respectively, the same functions the Commission had with regard to fishery

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1/ ORSTOM - Office of Overseas Scientific and Technical Research

research, management and development on an ocean-wide basis. It was pointed out, however, that this should not affect the functions already entrusted to the Committee on Management of Indian Ocean Tuna which the Commission set up at its first session in 1968. This would not prevent the new Committees from concerning themselves with development aspects, the harmonization of national policies among member countries or the preliminary consideration of management measures with respect to tuna stocks occurring in their respective geographic areas of competence. It was also stressed that the Commission would continue to have a dominant role to play in matters of relevance to the Indian Ocean as a whole or of interest to all its member countries.

63. There was general agreement that membership in the sub-regional Committees would be limited to coastal countries in the natural management areas served by these Committees. Attendance at sessions of the Committees by observers from other nations or international organizations would be governed by the relevant provisions of the Basic Texts of FAO. Two delegations felt that all member countries of the Commission should be allowed to become full members of any sub-regional Committee.

64. The Commission heard a report from the Secretariat on the administrative and financial implications of the establishment of the two sub-regional Committees for the Southwest Indian Ocean and the Bay of Bengal and noted that the necessary funds for servicing these Committees were available in the relevant chapter of the approved budget of the Organization. In this connexion, it agreed to terminate three of its subsidiary bodies, i.e., the Gulf Committee's Coordinating Sub-Committee for the Regional Fishery Survey and Development Project, the Executive Committee for the Implementation of the International Indian Ocean Fishery Survey and Development Programme, and the Special Working Party on Stock Assessment of Shrimp in the Indian Ocean Area.

65. The Commission noted that the sub-regional Committees for the Gulfs, the Southwest Indian Ocean and the Bay of Bengal, as well as the Committee on Management of Indian Ocean Tuna, would be provided with multidisciplinary technical support units based in the region of concern to each Committee. These units would be used as channels for the delivery of FAO's EEZ Programme and would be assigned a number of tasks, including the provision of specialized expert services to member countries upon request, the preparation of reviews of national and sub-regional fisheries and the formulation of options for fishery development and management, as well as the promotion of technical cooperation among the countries of the region.

66. The Commission was informed that UNDP was expected to provide the core funding required to finance the technical support units and took note with interest of the consultations under way between FAO and UNDP. It agreed that delegations should urge their governments to support strongly the relevant projects in the appropriate fora, particularly at the forthcoming FAO Regional Conferences for Asia and the Pacific (New Delhi, India, March 1980) and Africa (Lomé, Togo, June 1980), as well as at the forthcoming sessions of the Governing Council of UNDP. The Commission also pointed out that it would be necessary to seek additional sources of financial and technical assistance. It learned with great interest that at the initiative of the Seychelles, a meeting of economic planners from the Africa, Caribbean and Pacific island countries in the Southwest Indian Ocean and coastal countries of East Africa would take place in April 1980, within the framework of the Lomé II Convention. One of the objectives of the meeting would be to consider requests for EDF 1/ funds to finance regional projects, including fisheries projects.

67. The suggestion was made that it might prove useful to assist with the launching, efficient operation and eventual strengthening of the technical support units by transferring some FAO Headquarters posts on a short, or medium-term basis to the various units. The Commission expressed general support for the suggestion. At the same time, it wished to reiterate the views it had put forward at its last session on this matter. It indicated that while endorsing the statements of many delegations about the need to maintain a strong Headquarters, it welcomed the decentralization policy and further suggested that early steps should be taken to implement that policy. The Commission stressed its view that the contribution of the Headquarters staff to FAO's worldwide and regional programmes, was both outstanding and indispensable.

1/ EDF = European Development Fund

68. There were preliminary discussions about the location of the various technical support units. In particular, the delegation of Sri Lanka extended an invitation from its Government to host the Project for Tuna Management in the Indian and Pacific Oceans. Most delegations which took the floor expressed strong support for the choice of Sri Lanka as the site and urged FAO to take their recommendation and this invitation into account when making a decision in consultation with UNDP and on the basis of all relevant factors. Some delegations indicated that the views of the Indo-Pacific Fishery Commission should also be sought at its forthcoming session (Kyoto, Japan, May 1980). Invitations were also extended by the delegations of India and Indonesia for the same Project, by the delegation of the Seychelles for the Southwest Indian Ocean unit (supported by the other four delegations present from that sub-region) by the delegation of Bahrain for the Gulfs unit and by the delegation of India for the Bay of Bengal unit.

69. At the request of the Chairman, the Commission asked the Secretariat to prepare and circulate to member countries, in advance of its next session, a position paper which would consider specific suggestions to improve further the efficiency of the Commission and strengthen its authority. In particular, the Secretariat should address such matters as the ways in which the Commission should, in the context of its new structure, adopt and submit to member countries recommendations embodying management measures, together with an indication of the implications as regards the Commission's Statutes; the conditions under which these recommendations should be implemented by member countries, with particular reference to the "objection procedure" followed in the case of other regional fishery bodies; the consideration and implementation of measures recommended by sub-regional committees, bearing in mind the possible need to harmonize these measures and to adopt overall policies on an ocean-wide basis; and the organization and structure of the Commission's sessions, with special reference to the possibility of having technical meetings followed by plenary sessions. Some delegations suggested that in preparing this position paper the Secretariat should take into account the relevant work to be carried out by the staff of the Project for Tuna Management in the Indian and Pacific Oceans.

Relations with other bodies

70. The Commission discussed on the basis of the information provided in document IOFC/80/10 cooperation between itself and other international bodies interested in the fisheries of the region. It noted that cooperation with the Indo-Pacific Fishery Commission (IPFC) had already been discussed under item 3 of the agenda, but pointed to the need for clarifying the geographical areas of competence of the two bodies in order to avoid any possible overlapping of their activities. It requested the Secretariat to bring up this question for discussion at the next Session, especially in view of the sub-regional fisheries management and development committees which are being established in the Indian Ocean. This matter will be considered in the position paper to be prepared by the Secretariat.

71. The Commission also noted the close cooperation that existed between FAO and the United Nations Environment Programme (UNEP) and reaffirmed the need for clearly separating the mandate and the activities of the two agencies so that UNEP concentrated on the major environmental issues and FAO remained the organization exclusively responsible for fisheries management and development on a world-wide basis.

72. The Commission, while noting the research programmes being planned cooperatively by FAO and IOC also pointed to the need for IOC concentrating on oceanographic research separate from programmes of fishery science which are the responsibility of FAO. In particular, it welcomed the initiatives taken by IOC at its most recent Assembly to encourage research in oceanography in support of fisheries and the response given by FAO to those initiatives.

73. The Commission was informed of the cooperative training programme for fishery scientists between FAO and Unesco/IOC and of the FAO's proposals to the United Nations Science and Technology Conference for stimulating training in fishery science. The representative of UNDP provided information on the UN Science and Technology Development Fund.

INDIAN OCEAN PROGRAMME

Terminal report and future development activities

74. The Acting Programme Leader of the Indian Ocean Fishery Survey and Development Programme (IOP) introduced the Terminal Report (FI:DP/INT/76/012) containing the project findings and recommendations. He noted that the Programme had sponsored six major development and survey projects in the region in which more than U.S.$ 30 million would be invested. In addition, nine projects had been prepared which were related to the R/V DR. FRIDTJOF NANSEN surveys, most of which had received expressions of support from potential donors. However, although all were under active development, none of these projects had yet arrived at the execution stage. Several other projects had resulted from the work of the R/V PROFESSOR MESYATSEV and from the needs of the region generally. None of these had yet reached the execution stage.

75. While describing the overall success of the Programme, he pointed out some of the limiting factors encountered during the life of the project which, had alternate choices been available, could have assured an even greater success. The long gestation period of some of the projects initiated by IOP prevented the Programme from servicing them fully at the time of the termination of IOP. This, and the absence of an interim programme to bridge the gap between the termination of IOP and the start of the new development programmes in the sub-regions, did not permit the Programme to follow up its on-going initiatives.

76. He also indicated the greater advantages which would have accrued to participating countries had IOP been able to establish better working relations with some of the regional financial institutions and faster development could also have been fostered by cooperation with other technically advanced nations operating in the area. He pointed out the advantages of promoting a greater technical cooperation between the countries of the region by a greater utilization of fishing and other skills available in the Indian Ocean area.

77. He also noted that the development of national systems for the collection of statistical data had not been as successful as had been expected. This is one field where IOP should have played a greater role considering the great importance of data and statistics in planning monitoring and managing the resources.

78. In retrospect the balance between staff size, budget and man-months of consultancy time was satisfactory for the tasks at hand.

79. The representative from UNDP in supplementing the introduction of the Acting Programme Leader expressed his satisfaction at the successful conclusion of this Programme. He expressed his support at the findings of the Programme which he felt could have a far reaching effect not only on the development of the fisheries in the region but also on the economies of some of the coastal countries.

80. The Commission, in discussing the item, noted that very satisfactory progress had been made in spite of the limited resources in staff and funds and that the Programme from its earliest days was successful in generating considerable awareness and interest in problems and opportunities for fisheries development in the region both amongst the coastal States and the bilateral technical assistance agencies.

81. Some delegations requested that the text of the draft terminal report should be improved by indicating the amount of aid that flowed to the region through the programme by naming the donors who assisted in the Programme.

82. Some delegations, however, expressed concern about termination of the Programme on two counts. First, notwithstanding the wishes of the Commission members that it continue, which had been confirmed by the Executive Committee in April 1979, the Programme was not renewed on 1 January 1980. Second, the termination had been effected without giving the Commission the

opportunity to consider it. They feared that the momentum generated by IOP would be lost unless adequate and immediate funding arrangements could be found to ensure that the new technical support units to be attached to the sub-regional Committees will be able to start their work without undue delays. While appreciating the generous offer of UNDP in agreeing to fund these units, the Commission requested FAO to seek additional sources of funds to ensure the intensified growth of follow-up programmes.

83. The Assistant Director-General (Fisheries) informed the Commission of the new policy trend supported by the Committee on Fisheries and FAO's Council and Conference to establish intensified regional programmes based on sub-regional natural management areas. It was felt that in this way it would be possible to serve better the coastal countries and to assist them in building up their competence and make them more self-reliant in managing and developing their resources with the assistance of FAO.

84. The Commission adopted the Terminal Report of IOP and expressed its appreciation of the work done by IOP and the delegations complimented the Programme Leader, Mr. H. Winsor, and his staff on the achievements of IOP on such a wide range of activities which were deemed to be of very high priority to the region. The Commission requested FAO to present to Mr. Winsor, on its behalf, a scroll expressing its appreciation of his outstanding work as Leader of the Programme.

ANY OTHER MATTERS

85. No other matters of business were brought up at the meeting.

ELECTION OF OFFICERS

86. Under Rule II-I of its Rules of Procedure, the Commission is required to elect, at the end of every session, a Chairman and a maximum of six Vice-Chairmen who shall remain in office until the election of the new Chairman and Vice-Chairmen.

87. Acting on the recommendation of a Nominations Committee, the following countries were elected:

Chairman:	Indonesia
First Vice-Chairman:	Bahrain
Other Vice-Chairmen:	France
	Korea (Republic of)
	Seychelles
	Sri Lanka
	Thailand

DATE AND PLACE OF THE SEVENTH SESSION

88. The Commission received with appreciation an invitation by the Indonesian delegation to hold the Seventh Session of IOFC in Bali during the first quarter of 1982. The exact date and place of the session will be decided by the Director-General, in consultation with the Chairman and the authorities of the host country.

ADOPTION OF THE REPORT

89. This report was adopted by the Commission on 29 February 1980.

Appendix 4

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E.A. Purnell-Webb (Australia)

SECRETARIAT

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Meetings Assistant	Luisa Almagià
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Appendix E

ADDRESS BY HIS EXCELLENCY E. ADERMANN
MINISTER ASSISTING THE MINISTER FOR PRIMARY INDUSTRY OF THE
FEDERAL AUSTRALIAN GOVERNMENT

Mr. O'Connor, Mr. Lucas, Mr. Chairman, Distinguished Delegates, Ladies and Gentlemen,

It gives me great pleasure to welcome you to Australia on behalf of the Australian Government and on behalf of the Government to open this, the Sixth Session of the Indian Ocean Fisheries Commission. My colleague, Mr. Peter Nixon, the Australian Minister for Primary Industry, regrets that he is unable to be here but, as you may know, our Parliament has just resumed sitting and his Parliamentary and Cabinet responsibilities require his presence in Canberra today.

This is the first occasion on which Australia has had the privilege of hosting a session of the Indian Ocean Fisheries Commission and its subsidiary bodies. It is entirely appropriate that your meeting is being held in Perth, the capital of the State of Western Australia, which is the largest Australian city on our Indian Ocean seaboard. It is also the capital of the State which has the highest value of fishing production in Australia. The hospitality of Western Australia is famous in our country and this, together with the beauty of Perth and its setting on the Swan River, should provide a pleasant background to your deliberations.

Even prior to, and certainly since Australia proclaimed its 200-mile fishing zone on 1 November 1979, there has been developing a new awareness within this country of the importance of the sea and of fisheries. This awareness is shared by other countries who regard the establishment of extended zones of jurisdiction as providing new opportunities for national development. In carrying out its responsibilities for the management and development of the AFZ, the Australian Government has strengthened both its management and research organizations, and has approved a number of feasibility fishing projects with the aim of identifying new resources in the Australian fishing zone and opportunities for development of the fishing industry. It is also improving the system for the collection of scientific and other data about fisheries in the Australian fishing zone for both management and administrative purposes. As Australia is a federation, these activities are being carried on as a cooperative effort between the Federal and State Governments. The upgrading of our fisheries data will put us in the position of being better able to fulfil our obligations to ensure the proper management and optimum utilization of the resources within the Australian fishing zone. It will also provide our industry with the information on which to make informed commercial decisions. Further, and I know this is of concern to the FAO and to you all, I expect we should be better placed to play our part in FAO and your Commission.

Our zone will have common boundaries with the zones of Indonesia, Papua New Guinea, the Solomon Islands, France and New Zealand. This, together with our negotiation of fisheries management, is a much more international affair than it used to be. This in itself gives emphasis to the importance of our membership of international bodies such as the Commission.

The problems which Australia faces in the development and management of the Australian fishing zone are shared by all countries and meetings such as this provide an opportunity for countries with common problems and interests to share their experiences, and to work toward efficient and effective solutions of these problems. FAO's Comprehensive Programme of Assistance in the Development and Management of Fisheries in Economic Zones is a recognition of the importance of solving these problems and the importance coastal States place on the development of their fishing zones.

I understand that you will be discussing the outcome of a meeting of the Joint Tuna Management Committee of this Commission and the Indo-Pacific Fisheries Commission. In meeting its international commitment to make the surplus of resources in the Australian fishing zone available to foreign fishing, the Australian Government is concerned that effective

international arrangements should be established to allow for research into, and management of, the highly migratory tunas and billfishes. I trust this meeting will make a significant step in movement toward improved understanding of, and arrangements for, cooperative management of these stocks.

This meeting is being held at a time of change in the world fisheries scene, coastal States are faced with new opportunities and increased responsibilities, established fishing nations are making difficult adjustments. All countries are aware of a need for increased understanding of the sea and its resources. Many of the problems which we face are common; although there may be differences in degree, there is much common ground. We can all learn from each other.

The Indian Ocean Fisheries Commission, with the Indian Ocean Fishery Survey and Development Programme, has been responsible for demonstrating very clearly the benefits to be gained from a cooperative approach internationally to fishery problems. As the fishery scene in the Indian Ocean moves from resource identification to the problems of the development and management, I am confident the willing cooperation, which has been the hallmark of the Indian Ocean Programme will continue to be a feature of the Commission.

I wish you well in your deliberations and now have pleasure in declaring open the Sixth Session of the Indian Ocean Fisheries Commission.

Appendix C

ADDRESS BY MR. K.C. LUCAS
ASSISTANT DIRECTOR-GENERAL (FISHERIES), FAO

Mr. Chairman, Honoured Guests, Members of the Commission, Ladies and Gentlemen,

It is with great pleasure that I take this opportunity of addressing, on behalf of the Director-General of the Food and Agriculture Organization, this Sixth Session of the Indian Ocean Fishery Commission and to convey his best wishes for the success of your deliberations. May I also tell you how much we appreciate the very generous hospitality of the Government of Australia, the Host for this meeting.

Mr. Chairman, your Commission has great responsibility for a wide ocean area which holds many possibilities for fishery development, particularly for its coastal countries, some of which are among the most populated in the world and have severe problems of protein deficiency. This in itself, Mr. Chairman, makes any session of your Commission an important event. This session, however, meets at a time of significant and profound changes in the world which are affecting not only the fishery activities of the countries surrounding the Indian Ocean, but also the activities of the Commission itself and its own future.

The Indian Ocean is comparably less rich in fish resources than other oceans and produces at the moment catches of around 3.7 million tons or only six percent of the world's marine fish production. It is, however, generally agreed that the production could probably be increased by 2-3 times if all stocks were exploited to their maximum sustainable level. A greater exploitation of the resources of this ocean is, therefore, of common interest and concern to the coastal member countries of the Commission, and to other countries active in the Indian Ocean fisheries. Thus, all the Commissions' plans and activities must flow from this objective as FAO's programmes of assistance do.

The fisheries of the various areas of the Indian Ocean are at differing stages of development. The information you have gained through recent surveys and other studies on the resources has indicated the existence of fish stocks of significant magnitude that could yield additional supplies. There are other areas, of course, where large-scale commercial fishing opportunities are limited for lack of additional resources of significant size. While the major constraints to development are more or less common, their magnitude, and the degree of priority accorded by individual countries to overcoming them, vary from one sub-region to another. Considering the entire Indian Ocean Region, there are opportunities of increasing production of the familiar pelagic species; there is also a potentially very important meso-pelagic resource in the Arabian Sea, but its exploitation for fish meal in the first instance would require further development of exploitation techniques, product acceptability and economic feasibility.

Mr. Chairman, the programmes for improving technology and training at various levels and in several disciplines, organized by the Indian Ocean Programme in the different sectors of the region, are already yielding dividends by making the countries of the region more and more self-reliant and willing to undertake national programmes of exploitation and management of fishery resources off their coasts that will lead to overall economic development. But, since development is a long and continuous process, the programme of support to countries in training and advising people, helping out on equipment needs and justifying and locating investment funds has to be organized on a long-term basis.

Some of the living resources in the Indian Ocean are already heavily fished and even overfished. If countries are to continue to benefit from them, rational management of these stocks is essential and management measures will need to be developed and implemented without delay. Your Commission, Mr. Chairman, has special responsibility for the management of stocks and especially those exploited by more than one country. Stocks of tuna and of some other species in the Indian Ocean, including a number of shrimp stocks, are in this category and possible actions by the Commission to achieve better management of these species are the subject of discussion at this session.

On the question of tuna, you have before you for action the report of the Indian Ocean and Indo-Pacific Tuna Management Committees, which just held a joint meeting here in Perth. As regards shrimp stocks, your attention is invited particularly to the report of the Committee for the Development and Management of Fishery Resources in the Gulfs.

At your last session, it was decided that the future of the Commission should be a major item of the agenda. I hope you will grasp the opportunity to comment on the specific suggestions offered by the Organization with regard to both possible adjustments to the subsidiary bodies of the Commission and the establishment of locally based technical support units which could serve these subsidiary bodies. I should like to elaborate on this.

As you are aware, the work of the International Indian Ocean Fishery Survey and Development Programme wound up at the end of 1979, after 10 years of contribution to fisheries development in the region. However, the needs of the countries in the region for external assistance are still great and, in fact, have greatly increased with the advent of EEZs. The experience gained from the Indian Ocean Programme and from similar projects conducted elsewhere by FAO has demonstrated that such assistance can best be provided by locally based and multidisciplinary technical support units with wide-ranging terms of reference working with small geographic groups of countries which share common problems, opportunities, fish stocks or fisheries and which have other natural affinities - what we call "natural management areas". Your comments on the results of the Indian Ocean Programme and decisions on the proposed future assistance activities to be built on the foundation of these results and experience, together with you decisions on subsidiary institutional arrangements for carrying on future work, will be a critical aspect at this meeting.

The Law of the Sea, which is being developed and codified at the Third UN Conference on the Law of the Sea, has established the principle of Exclusive Economic Zones and a number of countries in this region have already extended their jurisdiction over fisheries. With the establishment of Exclusive Economic Zones, coastal States are now gaining control over all fishing in a wide zone off their coasts. Having taken on these added resources and the responsibility for managing them, the countries of the region, and particularly its developing coastal nations, have gained a new awareness of the desirability of effective utilization and management of fish resources in the region as a whole and especially those resources within areas of extended national jurisdiction as a greater source of food, employment and earnings.

At the same time, few developing countries in the region have the capabilities - human, physical, financial and institutional - to take advantage of the new opportunities and to fulfil the concomitant responsibilities for rational management and optimum use of the resources over which they now have jurisdiction. In response to the requests of the member countries, FAO now has a new programme of assistance to aid developing coastal States in the management and development of fisheries in Exclusive Economic Zones. Your Commission will have a chance of discussing these initiatives and we are looking forward to your constructive suggestions and comments.

Indeed, Mr. Chairman, the present session of your Commission will set the stage for Indian Ocean fisheries development for the 80s. You can count on FAO's closer collaboration and participation with you as you exchange ideas and take decisions for the development of new strategies for rational utilization of all fishery resources. Again, on behalf of Dr. Edouard Saouma, the Director-General of FAO, and the FAO Fisheries Department, we wish you a successful meeting and look to a stronger Indian Ocean Fishery Commission and better fisheries as a final result.

Appendix D

AGENDA

1. Opening of the session
2. Adoption of the agenda and arrangements for the session
3. Resource management issues
   (a) State of stocks
   (b) Fishery statistics and data: catches and effort
   (c) Tuna management
   (d) Management of other major stocks
4. Fishery development issues
   (a) Fishery development options - short and long term
   (b) Constraints to accelerated fishery development
5. Future of IOFC including its subsidiary bodies
   (a) Future orientation and requirements
   (b) Relations with other bodies
6. Indian Ocean Programme - Terminal report and future development activities
7. Any other matters
8. Election of officers
9. Date and place of the seventh session
10. Adoption of the report

Appendix E

LIST OF DOCUMENTS

IOFC/80/1	Provisional agenda
2	Annotated provisional agenda
3	Provisional timetable
4	The state of exploitation of fishery resources in the Indian Ocean
5	Current management problems in the Indian Ocean area - national and shared stocks
6	Report of the Sixth Joint Meeting of the IOFC Committee on Management of Indian Ocean Tuna (Seventh Session) and the IPFC Special Committee on Management of Indo-Pacific Tuna (Sixth Session), Perth, Australia, 20-22 February 1980
7	Fishery development issues in the Indian Ocean Area
8	FAO's programme of assistance in the development and management of fisheries in extended zones of national jurisdiction
9	Future of IOFC
10	Relations with other bodies
11	Report of the Second Session of the IOFC Committee for the Development and Management of the Fishery Resources of the Gulfs, Doha, Qatar, 18-20 September 1979
IOFC/80/Inf.1	List of documents
2	Information for participants
3	List of delegates and observers
4	Report of the Fifth Session of the Indian Ocean Fishery Commission, Cochin, India, 19-26 October 1977
5	Report of the Thirteenth Session of the Committee on Fisheries, Rome, 8-12 October 1979
6	Report of the Fifth Session of the IOFC/IPFC Joint Working Party of Experts on Indian Ocean and Western Pacific Fishery Statistics, Manila, Philippines, 1-3 March 1978
7	Report of the Fifth Joint Meeting of the IOFC Committee on Management of Indian Ocean Tuna (Sixth Session) and the IPFC Special Committee on Management of Indo-Pacific Tuna (Fifth Session), Manila, Philippines, 3-4 March 1978
8	Indian Ocean, Western and Eastern (Major Fishing Areas 51 and 57) Nominal catches by countries and species, 1972-78
9	Report of the Seventh Session of the Executive Committee for the Implementation of the International Indian Ocean Fishery Survey and Development Programme, Rome, 8-9 June 1978

IOFC/80/Inf.10 Report of the Eighth Session of the Executive Committee for the Implementation of the International Indian Ocean Fishery Survey and Development Programme, Rome, 23-24 April 1979

11 Rapporteur's Report - Tuna Consultation Meeting

12 Options for management of tuna in the Indian Ocean and Western Pacific

FI:DP/INT/76/012 Terminal report of the Indian Ocean Fishery Survey and Development Programme

Appendix F

A REVIEW OF MESOPELAGIC FISHES IN THE WESTERN INDIAN OCEAN, ARABIAN SEA AND GULF OF OMAN

The International Indian Ocean Expedition of 1962 determined that the primary productivity of the Arabian Sea, Gulf of Oman and the Gulf of Aden was extraordinarily high. Investigators postulated that a great abundance of small pelagic fish was probably present. The DR. FRIDTJOF NANSEN Survey of 1974-76 determined that the total stock of small pelagic species in the area was in the order of 2 million tons, much less than that postulated by the previous expedition, but it also found a biomass of approximately 100 million tons of mesopelagic species. That initial finding was supported to a degree by the Gulfs Project Survey which found several million tons in the Gulf of Oman and by a subsequent DR. FRIDTJOF NANSEN Survey of the waters of Pakistan which found a stock of 13 million tons in that country's coastal area. Interestingly, a further survey by that vessel in 1979 of the waters of Oman, the People's Democratic Republic of Yemen and Somalia, executed during the peak of the Southwest Monsoon in 1979, found very small quantities of mesopelagic species.

It has been determined that the stock is composed of a number of species of myctophids, that the fish are very small, that in general they have a diurnal migration from 400 metres during the daylight hours to a surface regime at night. A maximum catch of 20 tons was made in less than an hour by DR. FRIDTJOF NANSEN fishing off the island of Socotra.

Forty thousand tons of mesopelagics of a different species mix than that found in the Western Indian Ocean, Arabian Sea and Gulf of Oman were taken in one year in South African waters. They were caught by seining and reduced to meal and oil. It was found that conventional processing by screw-press was unsatisfactory and that the Alpha-Laval centrifugal process was necessary to reduce the water content of the cooked fish. It was also found that the residual lipid fraction in the meal was high and that the oil tended to be waxy. Commercial feeding of poultry apparently caused problems. Although data are not complete, it would appear that scouring may have been caused by the meal made from mesopelagics.

The oil content of the South African mesopelagics was 10%, the protein content was about 70% and the extraction rate about 22%, based on a wet fish measurement. Samples taken from the Indian Ocean regime, however, when analysed, showed a lower oil content although the same wax-like quality of the oil was noted.

In order to follow-up on the discoveries of the DR. FRIDTJOF NANSEN, the Government of Norway has agreed in principle to establishing a trust fund of U.S.$ 100 000 under which FAO will develop a project whose purpose is to determine the best catch methods which might be employed, the processing method appropriate to the species, the acceptability and marketability of the product and the economic viability of commercial harvesting and processing enterprise. The biological characteristics of the species would also be examined. It is expected that project preparation will commence shortly.

The Fishery Resources and Environment Division of FAO has arranged for two consultants, one each from Norway and Japan, to prepare a paper on mesopelagic fish which is now in its final state of preparation and will be published shortly. This paper summarizes what is known about the taxonomy, biology and behaviour of this group of fish. It also reviews, area by area, the information on the density and abundance of these species arising from plankton, fishing and acoustic surveys, and makes very rough estimates of the total biomass in each major ocean area. While mesopelagic fish of one species or another occur in all parts of the world, it appears that the densities in the Arabian Sea are higher than elsewhere.

Appendix G

SOME REQUIREMENTS FOR TECHNICAL AND FINANCIAL ASSISTANCE OUTLINED BY REPRESENTATIVES OF MEMBER COUNTRIES AT THE SIXTH SESSION OF IOFC

Note: As outlined in paragraph 49 of the report of the Commission, this list is intended to be illustrative only and should not be construed as indicating the total requirements of any Member Government.

COUNTRY	PRIORITY	REQUIREMENTS
India	1.	Investment financing, particularly risk capital for offshore development
	2.	Training in stock assessment and monitoring
	3.	Training of Indian personnel for resource survey and assessment, particularly for offshore resources including tuna, squid, cuttlefish, deep-sea lobster and shrimp and mesopelagics
	4.	Export improvement through better post-harvesting technology and marketing and market intelligence
	5.	Infrastructure, e.g., refrigerated transport and drydocks
	6.	Skipjack and yellowfin, development of pole-and-line, purse seine and longline fishing
	7.	Short-term consultancies for project identification and problem solving
Indonesia	1.	Resource identification; surveys to discover new resources
	2.	Exploratory and experimental fishing to develop methods for fishing underexploited resources
	3.	Improvement of artisanal fisheries
	4.	Training in how to conduct resource surveys and exploratory work
	5.	Mechanisms for bilateral or multilateral cooperation for management of shared stocks
Kenya	1.	Consultancies for project identification and formulation
	2.	Continued and intensified resource surveys in the inshore areas as well as in the open sea extending beyond the EEZ
	3.	Training and development in data collection and processing
	4.	Development of cost-effective surveillance system

COUNTRY	PRIORITY	REQUIREMENTS
Maldives	1.	Assistance in the setting up of a technical section of the Fisheries Department concerned with gear development, elementary marine biological work and collection of statistics (including training of Maldivians abroad and on the job, preferably with one or two technical experts in the field over an extended period)
	2.	Assistance in training in proper maintenance and operation of refrigeration equipment
Mauritius	1.	Identification and quantification of surface tuna stocks
	2.	Advice on alternative markets and price structures for tuna products
	3.	Advice in negotiation of joint venture agreements
	4.	Ecology of demersal fish in coral regions, possibly through support of university programmes in the regions
Seychelles	1.	Training and extension work for artisanal fishermen to permit (a) increase catch rates per man per day (b) participation in tuna fisheries through development of small and medium-scale boats and associated fishing methods
	2.	Improved post-harvest care and distribution of catches
	3.	Development of second generation and multipurpose vessels to permit upgrading of capacities of artisanal fishermen with particular attention given to energy conservation
	4.	Assistance in negotiation of joint venture agreements
Sri Lanka	1.	Training crews for tuna vessels
	2.	Experimental drift-net and longline fishing for skipjack and yellowfin in order to estimate magnitude of resource and to determine the optimum size of boat for operations on a commercial scale. Experimental fishing to be conducted in EEZ 50-200 mi from coastline of Sri Lanka
	3.	Quality control for exported shrimp
	4.	Assistance for collection of tuna statistics and monitoring tuna resources

COUNTRY	PRIORITY	REQUIREMENTS
Tanzania	1.	Resource assessment and evaluation for stocks in the EEZ and territorial waters, particularly coral reef species
	2.	Experimental fishing to develop methods for harvesting presently exploited and underutilized stocks
	3.	Strengthening training of scientists and technicians, and vessel operations in Tanzania and overseas
	4.	Development of small-scale artisanal fisheries (mariculture for shrimps, clams, oysters and seaweeds)
	5.	Advice on joint ventures to assist industrial development
	6.	Consultancies to assist in project identification, problem-solving and search for donors
	7.	Mechanisms for facilitating technical cooperation between developing countries
Thailand	1.	Development of appropriate resource management measures and techniques in the marine fisheries of Thailand
	2.	Stock assessments for shrimp and squid
	3.	Improvement of stock assessment methodology and techniques for demersal and small pelagics, and training on such improved stock assessment methodology and techniques
	4.	Development and management of small-scale fisheries

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